



Center on the Developing Child
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Science-Based Innovation and the Foundations of Resilience

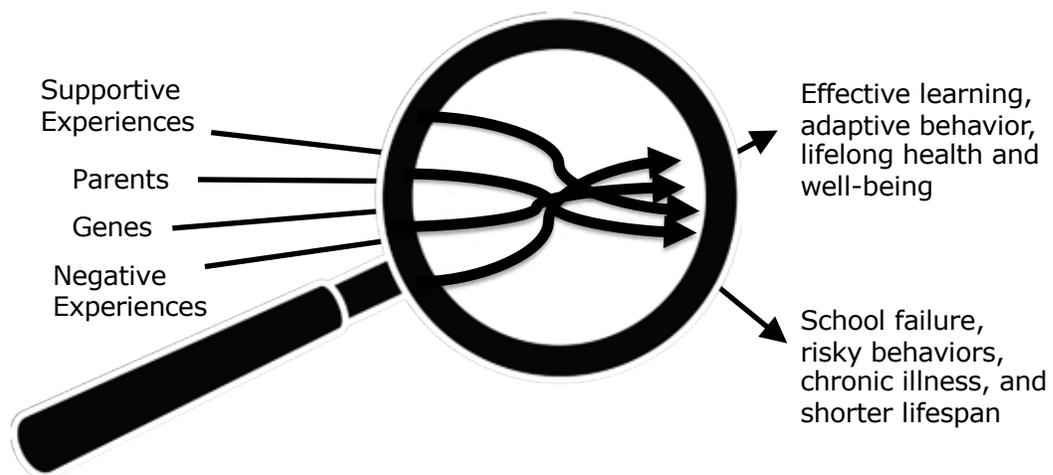
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DEPUTY DIRECTOR AND CHIEF KNOWLEDGE OFFICER
CENTER ON THE DEVELOPING CHILD AT HARVARD UNIVERSITY

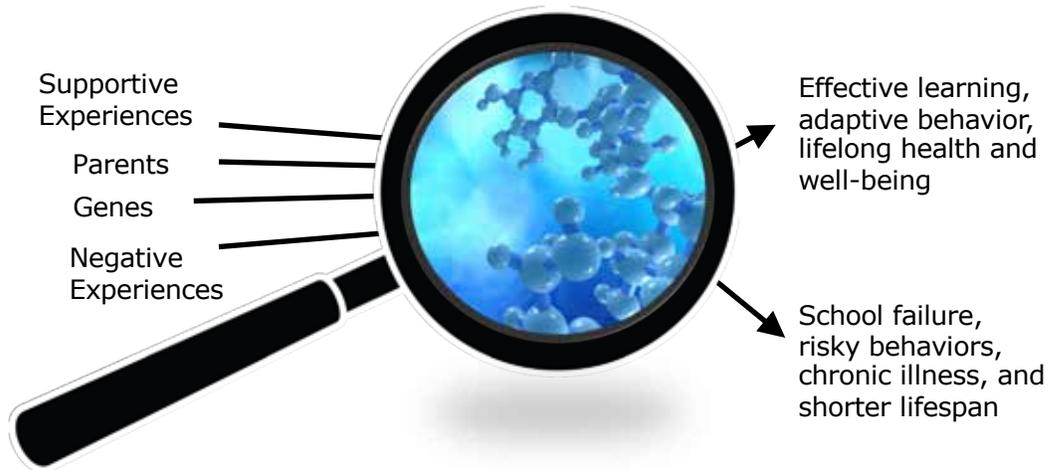
Building Strong Brains Tennessee Summit
Nashville, TN | September 11, 2018



Advances in Science Are Opening Up the Black Box of Disparities in Learning, Health, and Development

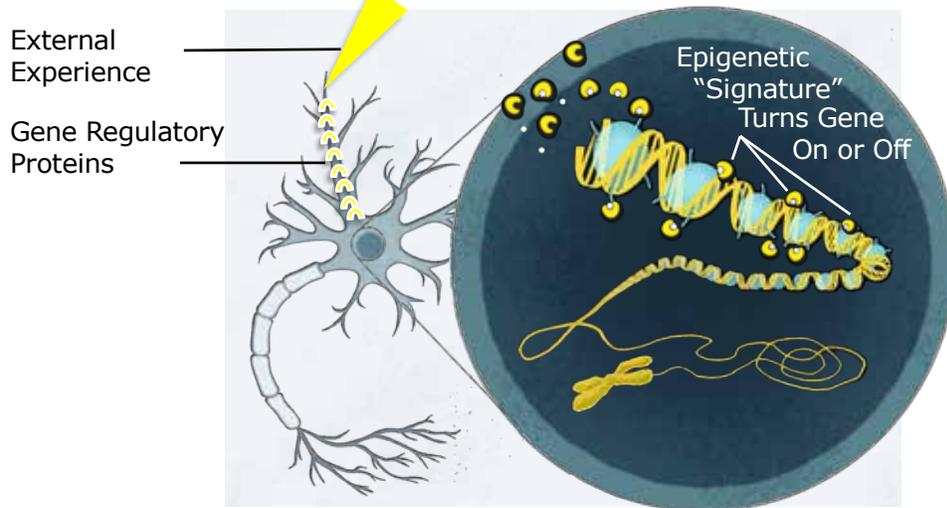


Advances in Science Are Opening Up the Black Box of Disparities in Learning, Health, and Development



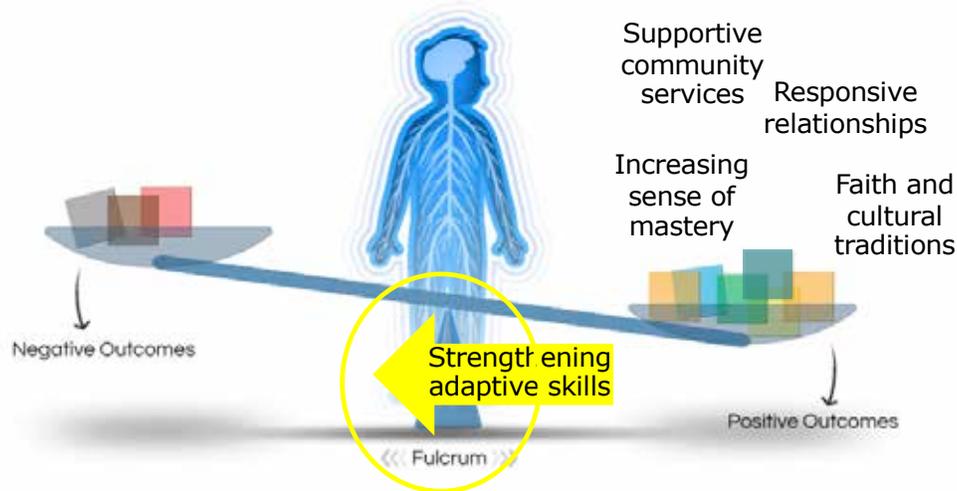
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Early Experiences Leave Chemical "Signatures" on Genes



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Resilience Can Be Strengthened by Supportive Relationships and Skill-Building



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**Scientific Concepts That Can Help Us
Think Differently About Solutions
to Big, Costly Problems That Have
Their Roots in Early Childhood**

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3 Key Science Concepts

- 1 Responsive relationships and positive experiences build strong brain architecture.



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How Serve and Return Builds the Foundation for Literacy Skills



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3 Key Science Concepts

- 1 Responsive relationships and positive experiences build strong brain architecture.
- 2 The core capabilities we all use to thrive in school, at work, and in the home are built over time through practice and modeling.



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Core Skills for Life, Learning, Work, and Health



An "Air Traffic Control System" in the Brain

Executive function and self-regulation are a foundational set of capabilities that help us:

- focus and sustain attention
- set goals, make plans, and monitor actions
- make decisions and solve problems
- follow rules, control impulses, and delay gratification

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The Pencil Tap Test

(Cognitive Flexibility and Inhibitory Control)



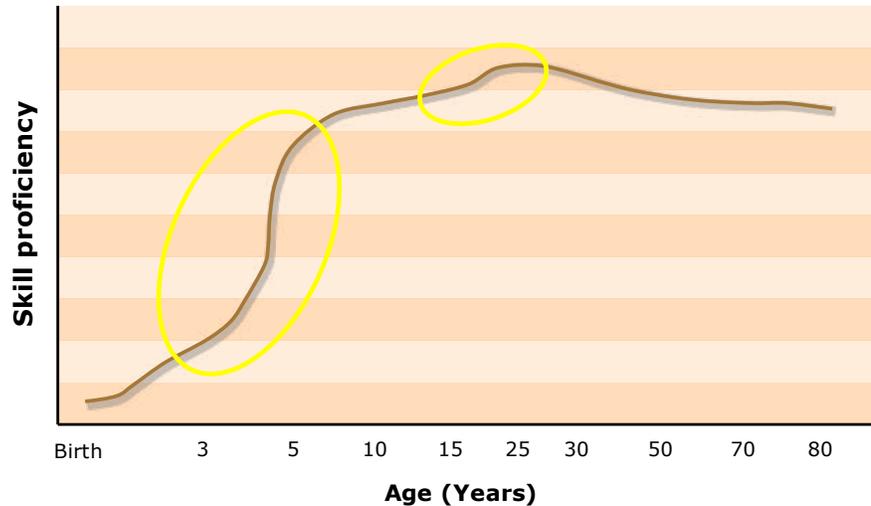
Age 3



Age 5

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The Development of Executive Function Skills Begins in Early Childhood and Extends Into the Early Adult Years



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How Services for Youth and Adults Can Support Core Skills

1. Provide strategies and opportunities to **practice** in situations that matter

- Scaffold
- Plan for obstacles
- Build on small successes
- Choose meaningful goals



2. Deliver services in ways that **reduce stress** rather than cause it

- Meet basic needs
- Streamline & simplify
- Use familiar tools
- Leverage social relationships



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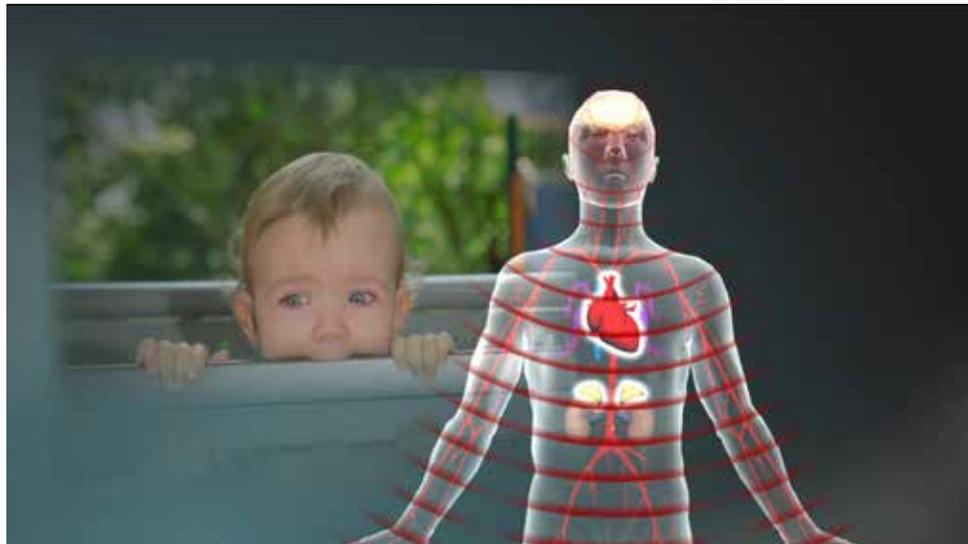
3 Key Science Concepts

- 1 Responsive relationships and positive experiences build strong brain architecture.
- 2 The core capabilities we all use to thrive in school, at work, and in the home are built over time through practice and modeling.
- 3 Serious adversity disrupts the developmental process with consequences across the lifespan.



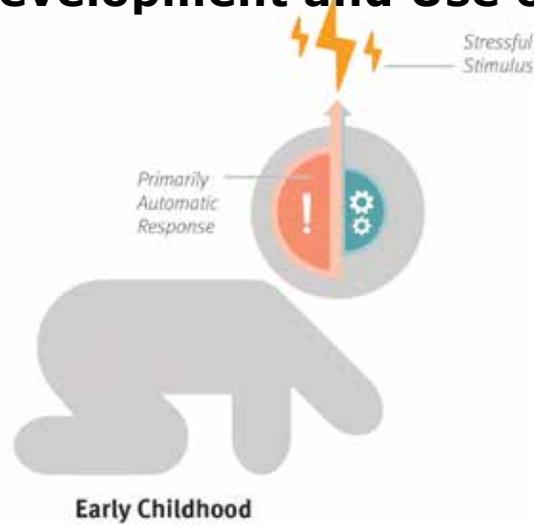
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Toxic Stress Disrupts the Development of Brain Architecture and Systems Affecting Lifelong Health



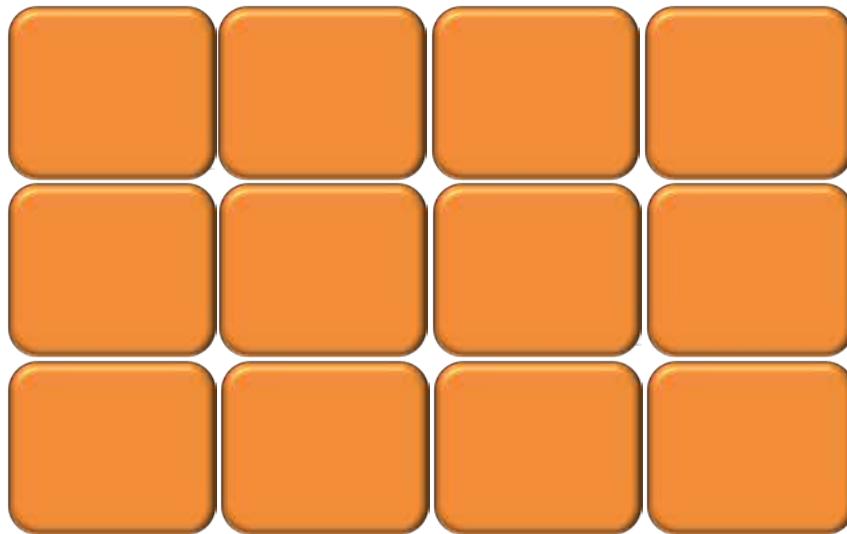
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How Excessive Stress Affects the Development and Use of Core Capabilities



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A Test of Working Memory Under Stress



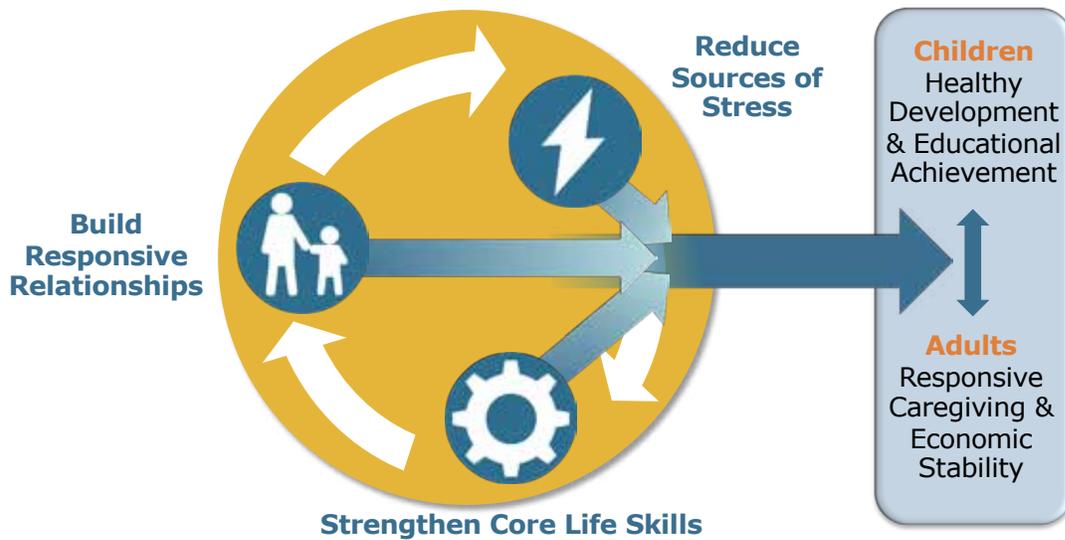
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Let's De-Stress



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Applying These Science Principles to Build Resilience in Children and Families



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Policy & Practice Shifts Using the Principles



Build Responsive Relationships

- Avoid children cycling in and out of programs
 - e.g., due to housing instability, involvement in child welfare, loss of child care subsidy
- Reduce turnover in child care and human services positions
 - e.g., through compensation, PD, benefits, etc.
- Provide workers in service programs with enough time to develop relationships with their clients



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Policy & Practice Shifts Using the Principles



Strengthen Core Life Skills

- Prioritize funding for programs that provide opportunities for participants to practice these skills
- Focus on small, incremental steps with frequent feedback
 - e.g., break down the goal “find housing” into a manageable sequence of smaller tasks
- Include executive function & self-regulation as a key strand in the “braided rope” of skills children need



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Policy & Practice Shifts Using the Principles



Reduce Sources of Stress

- Reduce barriers to families accessing basic supports—nutritious food, safe shelter, diapers, medical care, mental health services
- Provide services in well-regulated, welcoming environments
- Establish streamlined rules for eligibility and re-certification; minimize punitive regulations that add stress



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Using the Science Principles as a New Lens for Policies and Intervention Strategies



- Survey *current* policies and practices
- Assess *proposed changes*
- Envision *new strategies*
- Apply to policies and services for *children and adult caregivers*

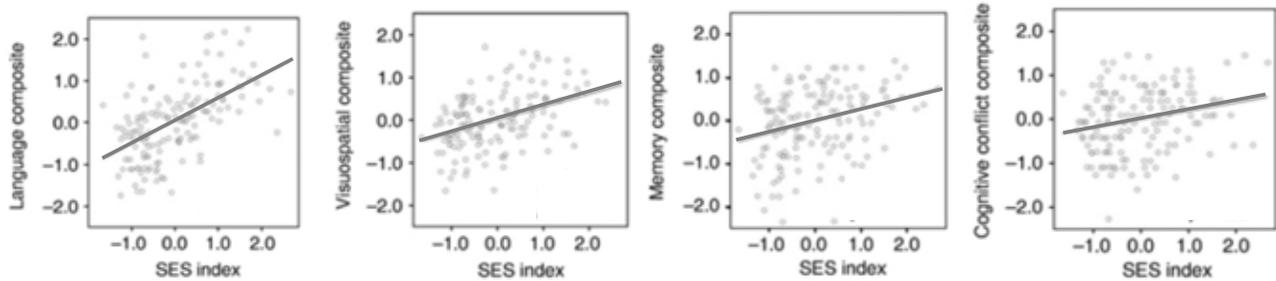
Is one of the principles a specific target of this policy or practice?

How does this policy or practice affect one or more of the principles?

Can you measure its impact of on one or more of the principles?

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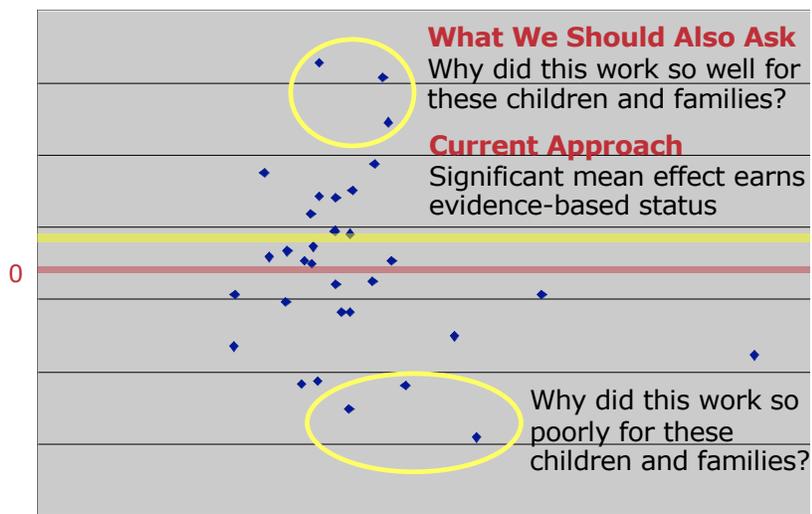
Measuring *What Works on Average* Is Important— But Not Enough to Achieve Breakthroughs



Source: Noble et al. (2007)

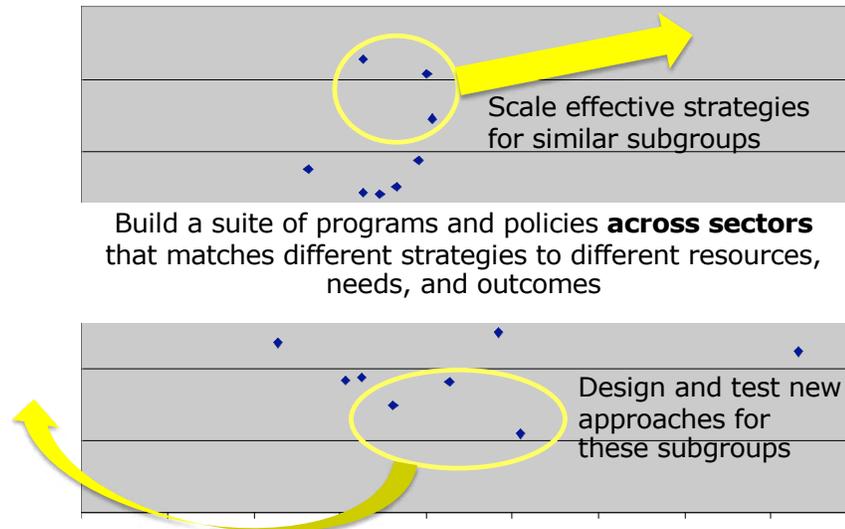
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Greater Impact at Scale Requires a New Definition of an Evidence-Based Program



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Greater Impact at Scale Requires a New Definition of an Evidence-Based Program



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Becoming More Precise About Impact



- *What about it works?*
- *How does it work?*
- *For whom does it work, and for whom does it not work?*
- *In what contexts does it work?*

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Becoming More Precise About Impact



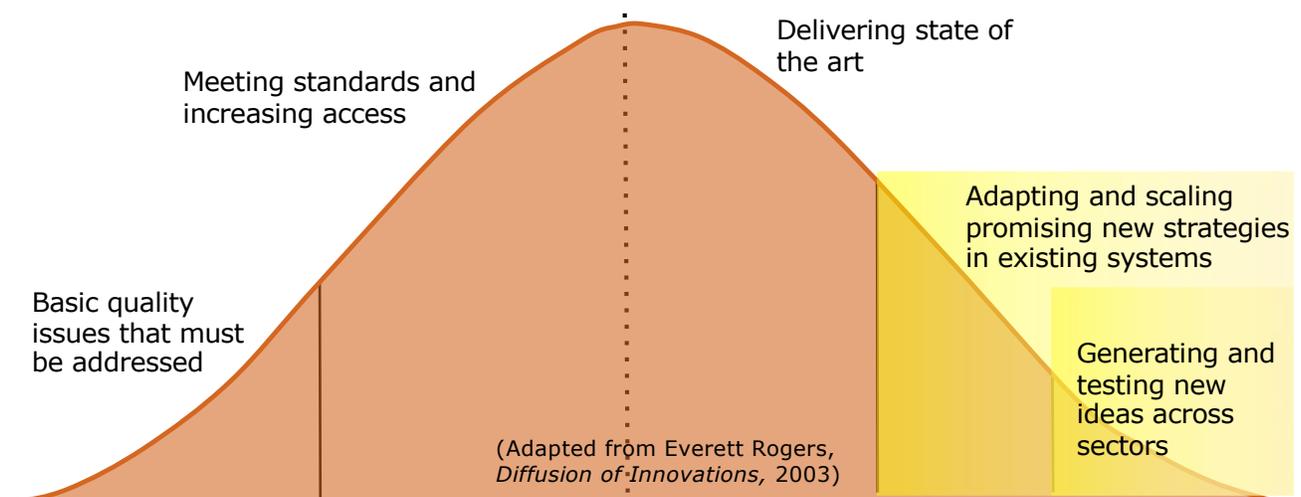
The IDEAS Impact Framework

A set of steps and method to help innovators:

- Go from **idea** to **implementation** to **measurement**.
- Be clear about the **root causes** they want to change and the **outcomes** they are aiming for.
- Determine **how** an intervention works, **for whom**, and **in what contexts**.
- Generate **usable knowledge** quickly.

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Any Healthy Field Requires a Full Spectrum of Approaches to Move Forward



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